Cover letter

Blue mussels (Mytilus edulis and M.trossulus) being closely related genetic lineages lack of reliable morphological traits needed for taxa identification in mixed populations. Identification of this taxa requires exhausting and expensive multilocus genotyping and any cues for distinguishing them without genotyping would save much research effort. Previously (Katolikova et al. 2016) we have shown that one of conchological trait (“black strip of prismatic layer under ligament”) possess asymmetrical distribution among taxa in the White Sea and could be considered as semi-diagnostic marker. In the present research article we assessed the applicability of this trait to taxa identification in other regions (Barents sea, Baltic sea, North sea and the Gulf of Maine). We found that in some areas this trait possess high predictive power but in others the power is lesser. Additionally we worked out the approach to express assessment of species composition in mixed populations on the basis of this trait with minimal genotyping efort.

The results of the work have not been submitted anywhere. We use some materials published previously in PLoS (Katolikova et al. 2016) but we considered them as a part of broader material.

We suggest Dr. Donald James Colgan (Australian Museum, AUSTRALIA) as an Academic Editor to handle our manuscript.

List of possible reviewers

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